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NIXON & VANDERHYE, PC			LU, JIPING	
901 NORTH GLEBE ROAD, 11TH FLOOR			ART UNIT	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/576,446	SAARELA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jiping Lu	3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 22 December 2009.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-7,9-11,13 and 19-22 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-7,9-11,13,19-22 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____ .	6) <input type="checkbox"/> Other: _____ .

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/22/09 has been entered.

***Claims Status***

2. Claims 1-7, 9-11, 13 and 19-22 are now in the case. Non-elected claims 14-18 have been cancelled without prejudice in favor of divisional application(s). Claims 8 and 12 have been cancelled.

***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed power station/plant and dried material connectors must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet,

even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-7, 9-11, 13, 19-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The added limitations of "for use as fuel in a power station" and "conveying the dried material from the drying space to the power station and using the dried material as fuel for the power station" in claim 1 and " a dryer for drying bulk material for use as fuel in the

power station” and “dried material connectors for conducting the dried material from the drying space to the power plant for use in the power plant” in claim 7 constitute new matters which are not supported in the originally filed specification. The originally filed specification and drawings do not disclose or remotely suggest the new added limitations. Regarding new matters above, the applicant alleges that the support of the newly added limitations can be found in the originally filed specification at page 7, lines 22-25. The examiner can not agree because the last paragraph of page 7 discloses nothing about “for use as fuel in a power station” and “conveying the dried material from the drying space to the power station and using the dried material as fuel for the power station” as now claimed in claim 1. The last paragraph of page 7 of the specification also mentions nothing about “a dryer for drying bulk material for use as fuel in the power station” and “dried material connectors for conducting the dried material from the drying space to the power plant for use in the power plant”. The last paragraph of page 7 of the specification merely mentions the invention is *particularly applicable in power stations operating in connection with pulp and paper mills* because heated waste water from the pulp and paper mills is usually available for heating gas (emphasize added). There is no disclosure about the dried bulk material is conveyed from the drying space to the power station and is used as fuel in a power station.

***Claim Rejections - 35 USC § 103***

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1, 5, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopp-Sorensen (EP 0552583) in view of Maffet (U.S. Pat. 4,237,618) and Hess et al (U.S. Pat. 3,591,449).

Kopp-Sorensen shows a method for drying bulk material comprising conveying material to be dried (i.e. sludge) with at least one drying conveyor 8,11 located in a drying space 13, feeding gas 96,103 into the drying space, bringing waste water into heat exchange relationship with the gas to heat gas while simultaneously cooling the waste water (col 7, lines 17-32), conducting the heated gas 103 through the at least one drying conveyor 11 conveying the material to be dried and thereafter discharging the gas 102 that has passed through the at least one drying conveyor from the drying space. The gas to be heated is air. The gas is heated by hot waste water in a heat exchanger 25. The bulk material comprises pretreated sludge. However, Kopp-Sorensen does not disclose that the waste water is from the pulp or paper production process and the dried material from the drying space is conveyed to the power station and is used as fuel for the power station. Maffet teaches a concept of using dried sewage sludge as fuel for the power station same as claimed (see col. 11, lines 12-34). The dried material is conveyed by the conveyance means 42. Hess et al. teach a concept of using heat from waste water from pulp or paper production process in a heat exchanger 24. The waste water is passed through heat exchanger 24 and is cooled. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Kopp-Sorensen to use dried material as fuel for the power station as taught by Maffet in order to pursue an intended use and to further modify the method of Kopp-Sorensen to provide the heat exchanger of Kopp-

Sorensen with waste water from pulp or paper production process as taught by Hess because it would be efficient to recover waste heat from any sources in order to save heat or energy.

8. Claims 2-3 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopp-Sorensen (EP 0552583) in view of Maffet (U.S. Pat. 4,237,618) and Hess et al (U.S. Pat. 3,591,449) as applied to claim 1 as above, and further in view of Mason (GB 283,014).

The drying method of Kopp-Sorensen as modified by Maffet and Hess et al. as above includes all that is recited in claims 2-3, 22 except for a chain conveyor. Mason teaches a drying apparatus with a chain conveyor 11 same as claimed. The chain conveyor 11 is equipped with a drive apparatus 19 and a wire 17 supported by the chain conveyor and running on the chain conveyor 11. The heated gas is arranged to travel through a bed of material to be dried lying on the wire 17 and through the wire 17 (page 2, lines 57-96). The wire 17 and the chain conveyor 11 are substantially equal in width. The chain conveyor 11 has two chains 13 and, between these, wire support members 14. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the drying method of Kopp-Sorensen to substitute the chain conveyor with two chains, wire and wire support members of Mason for the conveyor of Kopp-Sorensen in order to pursue an intended use. With regard to the claim 22, it would have been obvious to one having ordinary skill in the art at the time the invention was made to move the chain conveyor of Kopp-Sorensen at the speed of 0.02-0.1 meters per second, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

9. Claims 4, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopp Sorensen (EP 0552583) in view of Maffet (U.S. Pat. 4,237,618) and Hess et al (U.S. Pat. 3,591,449) as applied to claim 1 as above, and further in view of Lambert (U. S. Pat. 4,490,924).

The drying method of Kopp-Sorensen as modified by Maffet and Hess et al. as above includes all that is recited in claims 4, 6 except for the temperature of the heated gas is 35-85°C and the gas is heated in a heat exchanger in the drying space. Lambert shows a method for drying bulk material comprising the steps of conveying the material to be dried by means of conveyor 11 located in the drying space 12-17, feeding gas 19 into the drying space, heating the gas (by heat exchanger 21), conducting the heated gas through the drying conveyor 11 conveying the material to be dried, conducting the gas that has passed through the drying conveyor 11 out of the drying space (thru exhaust 22). The gas 19 is heated with water whereby said water is simultaneously cooled. The gas to be heated is air (see Fig. 1). The temperature of the heated gas is 150°F which is within the range of 35-85°C. The gas is heated in the heat exchanger 21 in the drying space. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the drying method of Kopp-Sorensen to heat gas at temperature of 35-85°C and to locate the heat exchanger in the drying space as taught by Lambert in order to pursue an intended use and to conserve energy and save cost.

10. Claims 7, 9-11 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopp-Sorensen (EP 0552583) in view of Mason (GB 283,014), Maffet U.S. Pat. 4,237,618) and Hess et al U.S. Pat. (3,591,449).

Kopp-Sorensen shows an apparatus for drying bulk material comprising a dryer 9 fro drying bulk material, wherein the dryer comprises a drying space (13, within 9), at least one gas

heating device 25, a blower 30 located outside the drying space arranged to blow gas into the drying space via said gas heating device 25 for producing heated gas 103 and/or to suck cooled gas 102 out of the drying space 13, several drying conveyors 8, 11 located in the drying space, through which drying conveyor the heated gas is arranged to travel, connectors (not number, see Fig. 2, at lower part of 25) for conducting waste water into and out of the gas heating device 25, which gas heating device 25 is arranged to heat gas with water and simultaneously to cool waste water with said gas. The drying apparatus of Kopp-Sorensen above shows an over all combination of conventional use of recovered waste heat from waste water 25 to heat gas for drying except for a chain conveyor with its detail structure. Kopp-Sorensen also does not disclose that the waste water is from the pulp or paper production process and the dried material from the drying space is conveyed to the power station and be used as fuel for the power station. Mason teaches a drying apparatus with a chain conveyor 11 same as claimed. The chain conveyor 11 is equipped with a drive apparatus 19 and a wire 17 supported by the chain conveyor and running on the chain conveyor 11. The heated gas is arranged to travel through a bed of material to be dried lying on the wire 17 and through the wire 17 (page 2, lines 57-96). The wire 17 and the chain conveyor 11 are substantially equal in width. The chain conveyor 11 has two chains 13 and, between these, wire support members 14. Maffet teaches a concept of using dried sewage sludge as fuel for the power station same as claimed (see col. 11, lines 12-34). The dried material is conveyed by the conveyance means 42. Hess et al. teach a concept of using heat from waste water from pulp or paper production process in a heat exchanger 24. The waste water is passed through heat exchanger 24 and is cooled. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the

drying apparatus of Kopp-Sorensen to substitute the chain conveyor with two chains, wire and wire support members of Mason for the conveyor of Kopp-Sorensen in order to pursue an intended use. It would also have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Kopp-Sorensen to use dried material as fuel for the power station as taught by Maffet in order to pursue an intended use and to further modify the apparatus of Kopp-Sorensen to provide the heat exchanger of Kopp-Sorensen with waste water from pulp or paper production process as taught by Hess because it would be efficient to recover waste heat from any sources in order to save heat or energy. With regard to the claimed width of wire in claim 10, it would have been obvious to one having ordinary skill in the art at the time the invention was made to design the width of wire at any desired size in order to pursue an intended use, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopp-Sorensen (EP 0552583) in view of Mason (GB 283,014), Maffet U.S. Pat. 4,237,618) and Hess et al U.S. Pat. (3,591,449) as applied to claim 7 as above, and further in view of Dinh (U. S. Pat. 5,343,632) or Lambert (U. S. Pat. 4,490,924).

The drying apparatus of Kopp-Sorensen as modified by Mason, Maffet and Hess et al. as above includes all that is recited in claim 13 except for the gas heating device is arranged inside the drying space. Dinh teaches a drying apparatus with at least one gas heating device 760 arranged inside the drying space (see Fig. 7) same as claimed. Lambert teaches a drying apparatus with at least one gas heating device 21 arranged inside the drying space 17 same as

claimed. Therefore, it would have been obvious to one having ordinary in the art at the time the invention was made to modify the drying apparatus of Kopp-Sorensen to locate the gas heating device inside the drying space as taught by Dinh or Lambert in order to pursue an intended use.

12. Claims 1, 4-6 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lambert (U. S. Pat. 4,490,924) in view of Salokangas (GB 2171401A), Maffet U.S. Pat. 4,237,618) and Hess et al (U.S. Pat. 3,591,449).

Lambert shows a method for drying bulk material comprising the steps of conveying the material to be dried by means of conveyor 11 located in the drying space 12-17, feeding gas 19 into the drying space, heating the gas (by heat exchanger 21), conducting the heated gas through the drying conveyor 11 conveying the material to be dried, conducting the gas that has passed through the drying conveyor 11 out of the drying space (thru exhaust 22). The gas 19 is heated with water whereby said water is simultaneously cooled. The gas to be heated is air (see Fig. 1). The temperature of the heated gas is 150°F which is within the range of 35-85°C. The gas is heated in the heat exchanger 21 in the drying space. Lambert discloses the claimed invention except for the gas is heated with waste water produced in a pulp or paper production process and the dried material from the drying space is conveyed to the power station and is used as fuel for the power station. Salokangas teaches a concept of using waste water for heating air thru a heat exchanger 5 same as claimed (see abstract). Hess et al. teach a concept of using heat from waste water from pulp or paper production process in a heat exchanger 24. The waste water is passed through heat exchanger 24 and is cooled. Maffet teaches a concept of using dried sewage sludge as fuel for the power station same as claimed (see col. 11, lines 12-34). The dried material is conveyed by the conveyance means 42. Therefore, it would have been obvious to one having

ordinary skill in the art at the time the invention was made to modify the drying method of Lambert to include the step of heating the gas with waste water as taught by Salokangas and to further modify the method of Lambert to provide the heat exchanger of Lambert with waste water from pulp or paper production process as taught by Hess in order to conserve energy and save cost. Moreover, it would have been an obvious matter of use of a known product (waste water results from pulp or paper production process) in order to obtain a predictable result and pursue an intended use, since applicant has not disclosed that the claimed using of waste water from pulp or per production process solves any stated problem in a new or unexpected way or is for any particular purpose which is unobvious to one of ordinary skill in the art and it appears that the claimed feature does not distinguish the invention over similar features in the prior art since, the drying method of Lambert as modified by Salokangas will perform the invention as claimed by the applicant with the using of any kind of the waste water. It would also have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Lambert to use dried material as fuel for the power station as taught by Maffet in order to pursue an intended use. With regard to claim 21, the claimed intended use, e.g. drying barks, sawdust, pretreated sludge or mixtures, this intended use is deemed to be met by Lambert's infeed 12 of material, like tobacco leaves.

13. Claims 2-3 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lambert (U. S. Pat. 4,490,924) in view of Salokangas (GB 2171401A), Maffet (U.S. Pat. 4,237,618) and Hess et al (U.S. Pat. 3,591,449) as applied to claim 1 as above, and further in view of Mason (GB 283,014).

The drying method of Lambert as modified by Salokangas, Maffet, Hess et al. as above includes all that is recited in claims 2-3 except for a chain conveyor for conveying material to be dried. Mason teaches a drying method which uses a chain conveyor 11 for conveying the material to be dried same as claimed. The chain conveyor 11 is equipped with a drive apparatus 19 and a wire 17 supported by the chain conveyor and running on the chain conveyor 11. The heated gas is arranged to travel through a bed of material to be dried lying on the wire 17 and through the wire 17 (page 2, lines 57-96). The wire 17 and the chain conveyor 11 are substantially equal in width. The chain conveyor 11 has two chains 13 and, between these, wire support members 14. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the drying method of Lambert to include a step of conveying the material to be dried by a chain conveyor as taught by Mason in order to pursue an intended use. With regard to claim 22, it would have been obvious to one having ordinary skill in the art at the time the invention was made to move the chain conveyor of Lambert at the speed of 0.02-0.1 meters per second, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

#### ***Response to Arguments***

14. Applicant's arguments filed 12/22/09 have been fully considered but they are not persuasive to overcome the rejection. First, it is noted that the broad claims presented fail to define over the prior art references. The claims merely call for using or recovering waste or sensible heat from a pulp or paper production process to heat bulk material on a perforated

conveyor to supply fuel to a power plant in order to save energy. This is a common practice in the heating art. The prior art references of record clearly shows such concept. The examiner is not convinced that such claimed well known features are patentable over the prior art references. Moreover, the applicant is invited to point out from the claims if there is any structural or process difference that the prior art references fail to teach or show. Second, with regard to the newly added limitations, they are deemed to be new matter (see rejection above). Third, it is the examiner's position that in view of the combined teaching of the prior art references, one skilled in the art would have found it to be obvious to combine because the recovery of waste or sensible heat from pulp or paper production process for drying fuel for a power plant would have been predictable (see KSR International Co. v. Teleflex, Inc. 82 USPQ 2d 1385 (2007). These well known conventional features are taught by new cited prior art patents to Hess et al and Maffet.

### ***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jiping Lu whose telephone number is 571 272 4878. The examiner can normally be reached on Monday-Friday, 9:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, KENNETH RINEHART can be reached on 571-272-4881. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jiping Lu/  
Primary Examiner  
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J. L.